

Application No.: 10/519,333 (PCT/SE03/01135) 2

Docket No.: 514862001700

AMENDMENTS TO CLAIMSCLAIMS

Claims 1-3 (Canceled)

4. (Currently amended) Multilayer microstructural device (1) ~~according to claim 3, wherein comprising a first and a second layer (2a, 2b), which layers are aligned relative to each other by mating alignment structures (3a, 3b), wherein~~

the first layer (2a) is a positive replication of a microstructural master (10); and the microstructural master (10) comprises at least one deep microscale structure (3a, 3b, 4) and at least one shallow surface relief (7) wherein said at least one deep microscale structure and said at least one shallow surface relief are aligned relative to each other by said mating alignment structures (3a, 3b), and wherein

the deep microscale structure is a fiber aligning groove (4);

the second layer (2b) is a negative replication of the same microstructural master (10);

and

the mating alignment structures (3a, 3b) originate from the same microstructural element (3a, 3b) on the master (10).

Claim 5 (Canceled)

6. (Original) Process for the production of a multilayer microstructural device comprising a first and a second layer, said layers comprising at least one functional element and a structure for aligning a signal conductor in relation to said functional element (-s), which layers can be aligned relative to each other by mating alignment structures, comprising the following steps:

- a) production of a master, comprising a large number of sections representing said first and second layers of said device;

sf-2115949

Application No.: 10/519,333 (PCT/SE03/01135) 3

Docket No.: 514862001700

b) formation of the desired functional elements and, alignment microstructures, so that the master comprises both the structural for alignment of the layers, the signal conductor, as well as the functional element, aligned relative each other with the available accuracy of the lithography step;

c) production, of two copies of said master, to first rat copy having the same polarity as the master and the second copy having the opposite polarity;

d) production of first and second plastic discs, said discs carrying both layers of the multilayer device having alignment structures originating from the same master; and

e) dicing the discs into individual first and second layers of the multilayer layer device.

7. (Original) The process according to claim 6, wherein the silicon master is produced using lithographical methods, such as electron beam lithography and/or photolithography.

8. (Original) The process according to claim 6, wherein the copies of step c are created by electroplating in metal.

9. (Original) The process according to claim 6, wherein the plastic discs of step d are created by injection molding, or any other molding process, using the copies of step c as mold surfaces.

10. (Original) An intermediate product of the process according to claim 6, consisting of a thermoplastic disc carrying at lease one layer of a multilayer device having alignment structures originating from the same master.

11. (Original) A multilayer device obtainable through the process according to any one of claims 6 -10.

Claim 12 (Canceled)

sf-2115949